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A COMPARISON OF MAIL-TECHNIQUES FOR STIMULATING INTEREST IN OCCUPATIONAL EDUCATION RESEARCH.

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THE STUDY COMPARED THE EFFECTIVENESS OF THREE MAILING TECHNIQUES FOR STIMULATING THE INTEREST OF PERSONS WHO HAD PREVIOUSLY BEEN IDENTIFIED AS UNINTERESTED IN CONDUCTING OCCUPATIONAL EDUCATIONAL RESEARCH. THE SAMPLE CONSISTED OF 4,222 TEACHERS IN PRACTICAL ARTS, VOCATIONAL AND TECHNICAL EDUCATION, AND COUNSELING AND GUIDANCE. THE AUTHORS HYPOTHESIZED THAT AN INDIVIDUAL MIGHT BECOME INTERESTED IN RESEARCH BECAUSE OF HIS DESIRE FOR PRESTIGE AND PROFESSIONAL ADVANCEMENT OR BECAUSE OF HIS INTELLECTUAL CONCERN ABOUT A SPECIFIC PROBLEM, ESPECIALLY IF RESEARCHABLE PROBLEMS WERE MADE MORE SALIENT, VISIBLE, TANGIBLE, AND SIGNIFICANT. ONE OF THE FOLLOWING WAS MAILED TO THE SAMPLE--(1) A BIBLIOGRAPHY OF OCCUPATIONAL EDUCATION STUDIES BEING PROPOSED, IN PROGRESS, OR COMPLETED SINCE 1963 IN MINNESOTA, (2) A LIST OF OCCUPATIONAL EDUCATION PROBLEMS AND PROBLEM AREAS CONSIDERED SIGNIFICANT, OR (3) BOTH THE BIBLIOGRAPHY AND THE PROBLEM LIST. A COVER LETTER AND A QUESTIONNAIRE WERE INCLUDED IN EACH. THE QUESTIONNAIRE WAS RETURNED BY 156 PERSONS. SAMPLE MEMBERS WERE GROUPED ACCORDING TO SCHOOLS WHICH WERE CLASSIFIED AS HAVING A POSITIVE OR INDIFFERENT RESEARCH ATMSOPHERE. PERSONS EMPLOYED IN SCHOOLS WITH AN INDIFFERENT RESEARCH ATMOSPHERE RESPONDED BEST IN THE COMBINATION TREATMENT. THOSE EMPLOYED IN A POSITIVE RESEARCH ATMOSPHERE RESPONDED BEST TO THE PROBLEM LIST TREATMENT. (PS)

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FOREWORD

A major purpose of state research coordination units is to stimulate research. In order to make progress toward this goal with some degree of efficiency, the Minnesota Research Coordination Unit in Occupational Education has, thus far, conducted a series of three studies. The first study, done in the Fall and Winter of 1965, assessed the human resources for occupational education research in the State by determining a) those educators teaching in fields related to occupational education who were interested in conducting, or in receiving further training for, research, and b) the general level of research competence possessed by interested persons. Since the actual availability of school personnel to conduct research or to receive research training is at least partially dependent upon their administrators, the second study, done during the Winter and Spring of 1965-66, was designed to identify a) the attitudes of school administrators toward the conduct of research in occupational education by their staffs, and b) some specific factors which might inhibit the conduct of research in their schools. The results of these two studies will soon be published in one report, entitled "Estimating the Human Resources for Research in Occupational Education in Minnesota." The information gained from both studies has already been very helpful to the Unit in its dissemination activities and in identifying and recruiting personnel for special research training programs.

The study reported herein, the third in the series, directly utilized the results of the first two studies as it compared the effectiveness of three mail-techniques to increase interest in the conduct of occupational education research among those persons previously identified as uninterested.

Thus, the Unit is attempting to carry out its own functions, and in the process, learn how it can do so more effectively.

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I. INTRODUCTION

Statement of the Problem

This study was designed to stimulate interest in conducting occupational educational research among persons who had previously been identified as uninterested. It compared the relative effectiveness of three mail-techniques of stimulation, and attempted to determine whether differences in type of school and the research atmosphere in a school were related to change in interest in research.

It can be hypothesized that there are at least two logical "reasons" why an individual might decide to become interested in research. On the one hand, he might be attracted by the current aura of prestige surrounding the activity and the resultant professional and financial rewards. On the other hand, he might become involved because of his intellectual concern about a specific problem. In many instances, of course, both "reasons" might operate concurrently.

The first "reason", prestige and professional advancement, can best be described within a social psychological framework. That is, interest-disinterest in research may be regarded as the property of a role, with changes in role perception due to the interpreted expectations of "significant others". Thus, a treatment designed to change interest level based on this framework would attempt to show the desirable professional role to be a "research oriented educator". Role conflicts and the position of the professional role in the total role hierarchy of the individual will mediate the success of this technique.

The second "reason", intellectual concern, can best be understood within a psychological framework. Since research is an endeavor directed toward solving problems by those who are concerned about them, changing interest in research may be partially a matter of making researchable problems more salient, visible, tangible, and significant in the mind of the individual.

Definitions of the Variables

The Treatments: The three treatments in the study were representative of each of the above two perspectives and a combination of them. The social psychological frame involves communications about or from other professionals that enable the person to reinterpret the other's expectations, and in turn, redefine his own role. The communication about the other's role in this study was presented through a bibliography of 115 studies in occupational education currently in progress, proposed, or completed since 1963 by researchers in Minnesota. Since many of the authors of the studies included in the bibliography are professional educators in positions comparable to those in the sample, it was assumed that the sample members would reinterpret the role of the professional educator to

include a research orientation. The bibliography, a cover letter that included a short description of the bibliography with a section on the need for and the professional advantages stemming from research, and a printed post-card questionnaire (see Appendix A) were mailed to the members of one of the treatment groups.

The psychological perspective on changing research interests involves increasing the sample member's intellectual concern about researchable problems by making them appear more tangible and significant. In the study, a list of twenty one problems and problem areas in occupational education, developed by seven educational leaders in the State[1], was used as the second treatment. Hopefully, the list would serve to relate and focus the individual's own professional concerns upon generalizable research problems, and further enhance their perceived value. A cover letter accompanied the problem list to explain its origin and the importance of the problems, to prompt the individual to relate his concerns to them, and to encourage the return of the enclosed post-card questionnaire.

The third treatment consisted of mailing <u>both</u> the bibliography and the problems list, together with an appropriate cover letter and the post-card questionnaire.

<u>Type of School</u>: The types of institutions in which the sample was employed were classified as follows: Junior High Schools, Senior High Schools, Colleges, and Vocational-Technical Schools. Both public and private institutions were included in each category.

<u>Research Atmosphere</u>: Based on the results of a prior study, each institution employing sample members was classified as having a "positive" or "indifferent" atmosphere for research. Institutions with a positive atmosphere were those in which both of two levels of administrators, e.g. principal and superintendent of schools, director and superintendent of schools, department head and dean, etc., indicated that research in occupational education was an appropriate activity for their staff members. Institutions with an indifferent atmosphere were those in which the attitudes of one or both levels of administrators toward the conduct of occupational education research by their staff was unknown.[2] In this classification it has been assumed that, since all administrators

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[1]Executive Director, State College Board; Executive Director, State Junior College Board; Commissioner of Education, State of Minnesota; Director, Vocational Section, Minnesota Department of Education; Dean, College of Education, University of Minnesota; Vice President for Educational Relationships and Development, University of Minnesota; Research Director, Minnesota Department of Employment Security.

[2]The 12 institutions in which one or both levels of administrators indicated that occupational education research was <u>not</u> an appropriate activity for their staff were not included in the study.

had an equal chance to make their views known, those that took the opportunity were less apathetic or indifferent toward research than those that did not, and that this more positive attitude was reflected in a more favorable research atmosphere and a greater degree of positive communication about research in the school. Further, since administrators are usually among teachers' "significant others", the administrators' attitudes toward research will ordinarily influence the teachers' perceptions of their own roles.

Change of Interest in Research: The effectiveness of the stimulation was measured by whether or not the sample members responded to the treatment by returning a completed post card questionnaire. A return was assumed to indicate a positive change in interest since the same persons were not sufficiently interested in the conduct of research to respond to an identical post card questionnaire when it was mailed to them six months earlier. While the validity of this assumption, as well as the factors that may have influenced the sample during the intervening six months, may raise doubts about the absolute success of the treatments employed, the relative effectiveness of the treatments should not be affected due to the design of the study.

Objectives

The following four major questions were posed for the study:

1. Is there a relationship between response rate to the post card questionnaire and the three treatments when the potential respondents are employed in schools with (a) positive, and (b) indifferent research atmospheres?

2. Is there a relationship between the research atmosphere in schools and (a) the total response rate to all three treatments, and (b) the response rate to each of the three treatments?

3. Is there a relationship between response rate to the post card questionnaire and types of schools with a positive research atmosphere?

4. Is there a relationship between response rate to the post card questionnaire and the three treatments when the potential respondents are employed in each of various groupings of types of positive research atmosphere schools?

II. METHOD

Sample

The sample (and population) for the study consisted of all the teachers in Minnesota during the 1965-66 school year instructing in fields related to occupational education (the practical arts, vocational and technical education, and counseling and guidance) who (a) did not respond to a post card questionnaire, mailed in October, 1965 designed to assess their interest in occupational education research, and (b) were employed in institutions in which the research atmosphere could be classified as either positive or indifferent. There were 4222 individuals in the sample.

Procedures

Sample members were first grouped according to the individual schools in which they were employed, and then each school was classified as having a positive or indifferent research atmosphere.

Schools with a positive research atmosphere were then organized by type of school (junior high school, senior high school, college, and vocational-technical school), and schools within each type were randomly assigned to the three treatments. Thus, all the sample members employed by a single school received the same treatment.

The schools with an indifferent research atmosphere were also organized by type of school, however, in this instance, individuals employed in each type of school were randomly assigned to the three treatments. Thus, individuals employed in the same school received different treatments.

The three treatments, mailed to the sample in April 1966, consisted of (a) a bibliography of occupational education studies being proposed, in progress, or completed since 1963 by researchers in Minnesota, (b) a list of occupational education problems and problem areas considered significant by a group of prominent educational leaders in Minnesota, and (c) both the bibliography and the problem list. In each case, an appropriate cover letter and a printed return postage guaranteed post card questionnaire accompanied the bibliography and/or problem list. These materials were sent to sample members at their school addresses. No follow-up was attempted.

Table 1 summarizes the distribution of the sample by treatment and research atmosphere.

Table 1

DISTRIBUTION OF THE SAMPLE BY TREATMENT AND RESEARCH ATMOSPHERE

Treatment	Positive Atmosphere	Indifferent Atmosphere	Total
Bibliography (I)	1131	418	1549
Problem List (II)	1043	219	1262
Combined (III)	1158	253	1411
TOTALS	3332	890	4222

Analysis

Numbers of persons returning the post card questionnaire and percent of returns were used to describe the results of the treatments. The data were examined for relationships among treatments, research atmospheres, and types of school (in terms of frequencies of response) using the chi-square statistic. The .05 level of significance was used throughout for accepting the existence of a relationship greater than zero.

III. RESULTS

One hundred fifty six persons (3.7%) completed and returned the post card questionnaire. When it is recognized that the original (October) mailing yielded only 8.2% return, and that the present study dealt only with non-respondents of the original mailing, the small return becomes understandable.

Objective 1

Table 2 presents the frequencies and percents of responses and non-responses by treatment for individuals in schools with a positive research atmosphere.

Table 2

RESPONSE FREQUENCIES AND PERCENTS BY TREATMENT FOR POSITIVE RESEARCH ATMOSPHERE SCHOOLS

(N=3332)

Response	Bibliography (I)		Problem List (II)		Combined (III)	
	No.	%	No.	%	No.	%
Did Respond	40	3.5	52	4.8	33	2.8
Did Not Respond	1091	96.4	991	94.9	1125	96.8

The chi-square test of independence yielded a value of 7.13, which was significant at the .05 level. Those who received the problem list responded more frequently than would be expected by chance.

Table 3 gives the frequencies and percents of responses and non-responses by treatment for individuals in schools with an indifferent research atmosphere.

Table 3

RESPONSE FREQUENCIES AND PERCENTS BY TREATMENT FOR INDIFFERENT RESEARCH ATMOSPHERE SCHOOLS

(N=890)

Response	Bibliography (I)		Problem List (II)		Combined (III)	
	No.	%	No.	%	No.	%
Did Respond	16	3.8	8	3.6	17	6.7
Did Not Respond	402	96.1	211	96.4	236	93.1

The chi-square test of independence yielded a value of 3.45, which was not significant at the .05 level (P=.20). Although those receiving the combined treatment responded most frequently, this relationship could well have occurred by chance.

Objective 2

Table 4 shows the numbers and percents of individual responses and non-responses by positive and indifferent research atmosphere schools.

Table 4

RESPONSE FREQUENCIES AND PERCENTS BY SCHOOLS WITH POSITIVE AND INDIFFERENT RESEARCH ATMOSPHERES

(N=4222)

	Positive Atmosphere		Indifferent Atmosphere	
	No.	%	No.	%
Did Respond	125	3.7	41	4.6
Did Not Respond	3207	96.2	849	95.4

The chi-square test of independence yielded a value of 1.40, which was not significant at the .05 level (P=.30). There was no difference in the response rate that could not readily be attributed to chance.

Since Tables 2 and 3 indicate that the treatments may be differentially effective within positive and indifferent research atmosphere schools, Table 5 shows frequencies of responses between schools with positive and indifferent research atmospheres for each of the three separate treatments.

Table 5

RESPONSE FREQUENCIES BY RESEARCH ATMOSPHERE WITHIN SEPARATE TREATMENTS

(N=4222)

Response	Bibliography (I)		Problem List (II)		Combination (III)	
	Positive	Indiff.	Positive	Indiff.	Positive	Indiff.
Did Respond	40	16	52	8	33	17
Did Not Respond	1091	402	991	221	1125	236

The chi-square values found for the bibliography, problem list and combination treatments were respectively, .08 (P=.80), .70 (P=.50), and 9.25 (P=.01). Thus, the only significant difference, at the .05 level, between the response rates of individuals employed at schools with a positive research atmosphere and those employed at schools with an indifferent atmosphere was in the combination treatment. Apparently, the combination treatment was more effective for those in schools with indifferent research atmospheres.

Objective 3

Because of possible communication among individuals in those schools whose personnel received different treatments, data on frequency and percent of responses by type of school were obtained only for schools with a positive research atmosphere. Table 6 gives those frequencies and percents.

Table 6

RESPONSE FREQUENCIES AND PERCENTS BY TYPE OF SCHOOL FOR SCHOOLS WITH A POSITIVE RESEARCH ATMOSPHERE

(N=3332)

Response	Senior High		Junior High		Colleges		Vocational-Technical	
	No.	%	No.	%	No.	%	No.	%
Did Respond	101	4.2	11	2.5	5	1.9	8	3.2
Did Not Respond	2286	95.6	430	97.5	248	97.9	243	96.7

The chi-square test of independence yielded a value of 5.87, which was not significant at the .05 level (P=.20). There was no relationship between response rates and types of schools.

Objective 4

Since the expected frequencies of responses from junior high schools, colleges, and vocational-technical schools with positive research atmospheres were too small to permit treating those types of schools separately, Table 7 compares the response frequencies by treatments from various combinations of types of schools. Unfortunately, these combinations are not independent of each other; they do represent the only feasible groupings possible under the circumstances.

Table 7

RESPONSE FREQUENCIES BY TREATMENTS FOR GROUPINGS OF TYPES OF SCHOOLS WITH A POSITIVE RESEARCH ATMOSPHERE

Response	Junior & Senior High			Jr. High, Colleges, Voc.-Tech. Schools			Sr. High, Colleges, Voc.-Tech. Schools		
	I	II	III	I	II	III	I	II	III
Did Respond	38	46	30	6	14	4	37	46	32
Did Not Respond	945	823	946	296	308	319	942	849	985

The chi-square values among treatments for a) the junior and senior high schools, b) the junior high, colleges and vocational-technical schools, and c) the senior high, colleges, and vocational-technical schools were, respectively, 5.95 (P=.10), 6.80 (P=.05), and 5.12 (P=.10). Thus, while only the junior high, colleges, and vocational-technical school combination had a significant relationship between treatments and response rate, the trend within every combination of types of schools consistently indicates the problem list as the most favorable and the combination as the least favorable treatment. This is compatible with the results reported in Table 2.

IV. CONCLUSIONS AND DISCUSSION

Conclusions

Within the limitations imposed by the sample, the characteristics of the particular treatments, and the methodology employed, the following conclusions to the four objectives of the study appear warranted:

> Objective 1: Is there a relationship between response rate to the post card questionnaire and the three treatments when potential respondents are employed in schools with (a) positive, and (b) indifferent research atmosphere?

For persons employed in positive research atmosphere schools, there is a relationship between response rate and treatments. The problem list treatment yields the greatest rate of returns and is therefore considered the most effective of the three mail techniques for increasing interest in the conduct of occupational education research.

On the other hand, for persons employed in schools with an indifferent research atmosphere, there is no relationship between response rate and treatment. There was, however, in the sample, a tendency for the combination bibliography-problem list treatment to result in the highest return rate. The lack of a significant relationship may be partially attributed to communication among teachers in the same school who received different treatments; in effect, this communication would act to reduce the differences among treatments.

> Objective 2: Is there a relationship between the research atmosphere in schools and (a) the total response rate to all three treatments, and (b) the response rate to each of the three treatments?

There is no relationship between the research atmosphere in schools and (a) the total response rate to all three treatments, (b) the response rate to the bibliography treatment, or (c) the response rate to the problem list treatment. There is a significant relationship between research atmosphere and the response rate to the combination bibliography-problem list treatment. Persons employed in schools with an indifferent research atmosphere respond at a higher rate to the combination treatment than do persons employed in schools with a positive research atmosphere. The conclusions drawn for objectives one and two are therefore compatible.

> Objective 3: Is there a relationship between response rate to the post card questionnaire and types of schools with a positive research atmosphere?

There is no relationship between response rate to the post card questionnaire and persons employed in positive research atmosphere junior high schools, senior high schools, colleges, and vocational-technical schools. Approximately the same overall rate of return can be expected from all types of research supportive schools.

> Objective 4: Is there a relationship between response rate to the post card questionnaire and the three treatments when the potential respondents are employed in each of various groupings of type of positive research atmosphere schools?

There is a consistent trend in response rates among various combinations of types of positive research atmosphere schools which indicates the problem list as the most effective and the combination as the least effective treatment. This relationship between response rate and treatments was significant for the junior high, college and vocational-technical school grouping, and approached significance ($P=.10$) for other combinations of types of schools.

Discussion

The staff employed in schools with an indifferent research atmosphere tend to need both social support for playing the "research role", and intellectual stimulation to focus attention upon researchable problems.

In those schools with research supportive administrators, the staff probably already has professional role perceptions which include the "educator as a researcher". The most effective research stimulant in their case, therefore, is focusing attention on relevant, significant problems in order to capture intellectual attention, curiosity, and concern, e.g. the list of problems. Moreover, these individuals did not seem to perceive the bibliography, when sent with the problem list, as role supportive. Rather, since they already assume the support of significant others, the bibliography represents a report of the research already conducted in relation to the problems to be solved. Many might therefore tend to be discouraged from ready identification of a "new and significant" problem. Thus, the bibliography could interfere with or act as a dampener for the stimulation of the problem list.

Appendix A

POST CARD QUESTIONNAIRE

Name_____ Institution_____

Address_____ Field of Specialization_____

Check the appropriate boxes:

I. Interested in:

☐ Conducting research ☐ Acquiring research training ☐ Both

II. Preparation: Check **all** your formal educational experiences and attainments:

☐ Descriptive Statistics ☐ Inferential Statistics
☐ Research Assistant ☐ Research Methods Course
☐ No Degree ☐ Bachelors Degree ☐ Bachelor Plus
☐ Masters ☐ Masters Plus ☐ Doctorate

Institution providing majority of research related experience_____

Recency of preparation:

☐ Before 1955 ☐ 1956-60 ☐ 1961-65

III. Experience: Total number of research studies completed or in progress requiring the collection of original data (including degree fulfilling studies)

☐ None ☐ One ☐ 2-4 ☐ 5 or more

Recency of last study:

☐ Before 1955 ☐ 1956-60 ☐ 1961-65